Check List 2006: **2**(2)
ISSN: 1809-127X

NOTES ON GEOGRAPHIC DISTRIBUTION

Orthoptera, Acridoidea, Melanoplinae: *Dichroplus obscurus* Bruner, 1900, Distrito de los Campos, Misiones, Northeastern Argentina: historical occurrence

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Dichroplus obscurus Bruner, 1900 is closely allied to other eight species (*D. conspersus, D. maculipennis, D. pratensis, D. porteri, D. robustulus, D. silveiraguidoi, D. vittatus* and *D. vittiger*) that conform the *Maculipennis* group (Cigliano and Otte, 2003), widely distributed in Argentina, with a strong presence of some species in the Pampas, mainly in pastures, and also in Patagonia and the biogeographical regions of Monte and Espinal (Cigliano and Otte, 2003). Some of them also occur in Uruguay and Southern Brazil, and some have been cited for Bolivia, Chile and Paraguay (*D. maculipennis*: Brazil, Chile and Uruguay; *D. pratensis*: Bolivia, Brazil and Urguay; *D. porteri:* Chile; *D. conspersus*: Brazil, Chile; *D. robustulus*: Brazil, Uruguay, *D. vittiger*: Chile, *D. silveiraguidoi*: Brazil, Uruguay).

According to Cigliano and Otte (2003), *D. obscurus* occurs in Argentina (Santa Fe and Buenos Aires provinces), Brazil (Southern Rio Grande do Sul state), and Uruguay. However, they indicate that a specimen of *D. obscurus* deposited in the Academy of Natural Sciences of Philadelphia, was collected in Misiones province (Argentina) in January of 1911, by Jorgensen. Nevertheless, the former record is doubtful because the species has not since been recorded from that locality that, in addition is a forest area in which the presence of *D. obscurus* is highly improbable. We consider that the *D. obscurus* record by Jorgensen (1911) for Misiones, may be due to erroneous labelling of the specimen.

In this paper we communicate the finding of a marginal and unstable *D. obscurus* population in Southern Misiones province, belonging to the phytogeographic Distrito de los Campos. This district extends from southern Misiones to the northeastern part of the neighboring province of Corrientes, and forms a gradual transition between the Paraná and Chaco biogeographic provinces (Cabrera, 1976; Giraudo et al. 2003), characterized by savannas which alternate with woodlands and forests of *urunday* trees (*Astronium balansae*).

The location of the population analyzed during the summers of 1999 through 2006 (27º26´30,7´´ S 55º52´49,7´´ W - 113 meters above sea level), is indicated in Figure 1. A total of 18 individuals (10 males and 8 females) were studied. The scarcity of specimens is attributed by us to the marginal (thus, unstable) nature of the population. Morphometric measurements were obtained using high precision calipers (0.01 mm) and karyotyping was performed following Bidau and Martí (2001). Voucher specimens are deposited in the Laboratorio de Genética Evolutiva of the Facultad de Ciencias Exactas Químicas y Naturales, Universidad Nacional de Misiones.

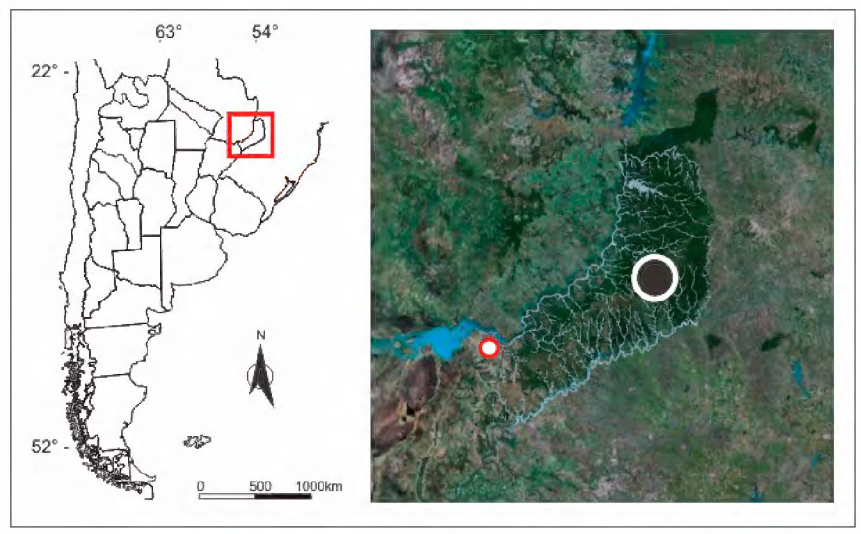

Figure 1. Map of Argentina emphasizing the province of Misiones. The red circle indicates the location of the Posadas population of *Dichroplus obscurus* (27º26´30, 7´´ S 55º52´49,7´´ W), and the white circle indicates the population cited by Jorgensen (Cigliano and Otte, 2003).

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Table 1. Measurements (± Standard Error) in mm of six morphometric characters of *Dichroplus obscurus* from the Posadas population Number of individuals examined (N), Total body length (BL), length of left hind femur (F3L), length of left hind tibia (T3L), length of tegmina (TeL), mid-dorsal length of pronotum (PL) and height of pronotum (PH).

	N	BL	F3L	T3L	TeL	PL	PH
Males	10	20.92 ± 0.8	12.00 ± 0.5	9.97 ± 0.5	14.38 ± 0.5	4.57 ± 0.1	3.39 ± 0.2
Females	9	29.09 ± 0.3	16.37 ± 0.7	13.95± 0.5	17.88± 0.4	6.62 ± 0.2	4.70 ± 0.1

The presence of *D. obscurus* (Figure 2) in Posadas was first reported and fully documented for the first time for Misiones province, by Bidau and Marti (2001) who collected several individuals which were karyotyped and showed the unique *D. obscurus* chromosome complement described by Sáez (1963) that includes an autosomal fixed centric fusion and a neo-XY pair of sex chromosomes. *D. obscurus* and the closely related *D. pratensis* are very similar morphologically in external characters but may be identified through careful analysis of genitalia; however, they have been confused in the past, and many of the *D. pratensis* records for Corrientes province in Argentina by Liebermann (1963) possibly belongs to *D. obscurus*. Thus, karyotyping is the simplest way to identify both species due to the uniqueness of their chromosome complements.

In their revision of the *Maculipennis* group, Cigliano and Otte (2003), indicate that *D. obscurus* is a moderately large grasshopper (male: 24-26 mm; female 31-35 mm). In the present work, we found smaller individuals (Table 1) which is expected if Posadas represents a truly marginal population of *D. obscurus*. Further support of its geographic marginality comes from the low number and density of individuals in the population, and the complete absence of more populations of *D. obscurus* in the same geographic region despite extensive sampling during 17 years. Also, the Distrito de los Campos is a transitional environment (see Introduction) which possibly acts as an effective barrier to the advance of species of *Dichroplus* more adapted to arid environments.

Finally, we should mention the reference to the presence of *D. obscurus* in Misiones made by Cigliano and Otte (2003) and based in a single labeled specimen collected by Jorgenssen in 1911. Although the locality of the specimen is not specified in their publication, according to the maps showed (see their Figures) it would correspond to "San Javier-San José, Pindapoy" (Figure 1, white circle in the map) where also a specimen of *D. vittatus* (another species of the *Maculipennis* group) was apparently collected. However, *D. vittatus* is a typical dweller of dry and arid environments, contrary to the Misiones location indicated in Cigliano and Otte (2003), which may suggest that Jorgensen erroneously cited this specimen's location. It also suggests that this may be the case for the Misiones specimen of *D. obscurus*.

Figure 2. *Dichroplus obscurus*, Male (A) and Female (B), collected in Posadas.

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Acknowledgments
The authors are very grateful to the Director de Flora y Fauna of the Ministerio de Ecología de Misiones, Mr. Ernesto Krauczuk for his invaluable help in the field, and the authorization for capturing grasshoppers in the territory of Misiones province. DAM is very grateful to all people in our laboratory, and the continuous support of CONICET. CJB especially acknowledges the support of FIOCRUZ and CNPq.

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Received May 2006
Accepted August 2006
Published online August 2006